# DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

#### LAKE TROPHIC DATA

# MORPHOMETRIC:

Lake: SUNRISE LAKE	Lake Area (ha): 103.96
Town: MIDDLETON	Maximum depth (m): 4.1
County: Strafford	Mean depth (m): 1.9
River Basin: Coastal	Volume (m <sup>3</sup> ): 1966000
Latitude: 43°27'15" N	Relative depth: 0.4
Longitude: 71°04'30" W	Shore configuration: 1.52
Elevation (ft): 666	Areal water load (m/yr): 3.77
Shore length (m): 5500	Flushing rate $(yr^{-1})$ : 2.00
Watershed area (ha): 854.7	P retention coeff.: 0.71
% watershed ponded: 0.0	Lake type: artificial

BIOLOGICAL:	6 March 1991	19 July 1990
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 50%	CHRYSOSPHAERELLA 70%
#2	DINOBRYON 50%	ASTERIONELLA 25%
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		710.0
CHLOROPHYLL-A (µg/L)		6.13
DOM. ZOOPLANKTON (% TOTAL) #1	POLYARTHRA 64%	COLLOTHECA 46%
#2	KERATELLA 27%	KERATELLA 28%
#3		
ROTIFERS/LITER	697	174
MICROCRUSTACEA/LITER	22	30
ZOOPLANKTON ABUNDANCE (#/L)	730	218
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		2.7
BOTTOM DISSOLVED OXYGEN (mg/L)	10.6	8.0
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		30
#3		

# SUMMER THERMAL STRATIFICATION:

#### not stratified

Depth of thermocline (m): None Hypolimnion volume  $(m^3)$ : None Anoxic volume  $(m^3)$ : None

CHEMICAL: Lake: SUNRISE LAKE Town: MIDDLETON					
	6 Marcl	n 1991	19 .	July 1990	
DEPTH (m)	1.0	2.5	1.0		3.0
pH (units)	6.0	6.1	6.9		6.9
A.N.C. (Alkalinity)	2.6	3.7	3.8		3.8
NITRATE NITROGEN	0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.22	0.34	0.24		0.29
TOTAL PHOSPHORUS	0.010	0.009	0.010		0.011
CONDUCTIVITY (µmhos/cm)	27.0	33.8	33.2		33.4
APPARENT COLOR (cpu)	36	36	29		29
MAGNESIUM			0.45		
CALCIUM			2.5		
SODIUM			3.9		
POTASSIUM			0.40		
CHLORIDE	3	4	4		4
SULFATE	3	4	3		3
TN : TP	27	38	24		26
CALCITE SATURATION INDEX			3.4		

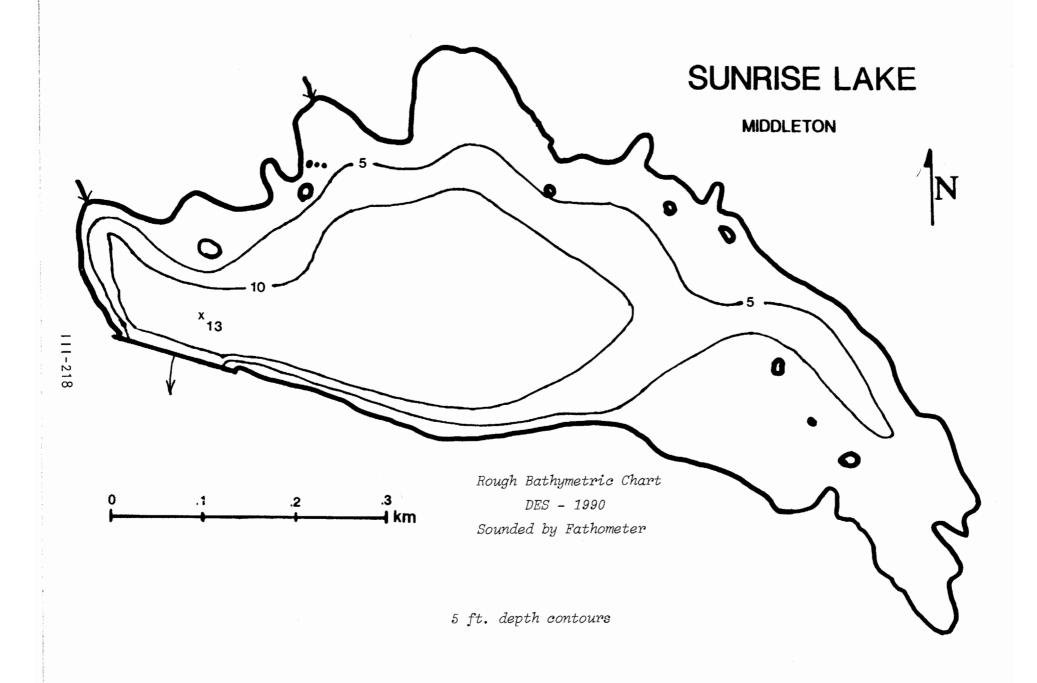
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1990

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	3	1	1	5	Meso.

#### **COMMENTS:**

- 1. Previously known as The Dump Reservoir.
- 2. Public access was present -- a shallow, dirt launch site.
- 3. Four or five boats of greater than 50 horsepower were observed on this shallow pond.
- 4. There were many shoal areas scattered around the lake.
- 5. Rhizosolenia (20%) and Asterionella, Melosira, tiny green flagellates and Mallomonas (each 10%) were the dominant genera of wholewater phytoplankton.
- 6. Sunrise Lake was previously surveyed and classified in 1977. The lake went from oligotrophic to mesotrophic because of somewhat more rooted plants and algae, and slightly less water clarity.



## FIELD DATA SHEET

LAKE: SUNRISE LAKE

DATE: 07/19/90

TOWN: MIDDLETON

WEATHER: SUNNY - MID 80'S; VERY WINDY

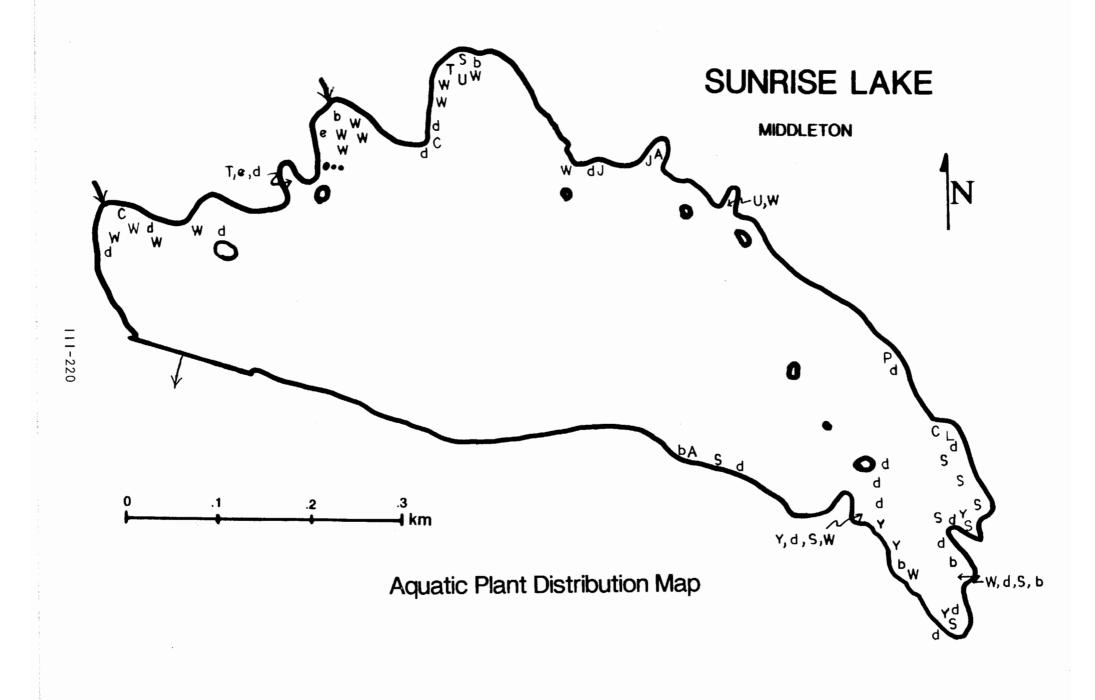
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	26.1	8.0	99 %
1.0	26.0	8.0	99 %
 2.0	26.0	8.0	99 %
3.0	26.0	8.0	99 %
144			17477
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1.00			
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SECCHI DISK (m): 2.7 COMMENTS:

BOTTOM DEPTH (m): 3.5

TIME:

\*Dissolved oxygen values are in mg/L



## AQUATIC PLANT SURVEY

LAK	E: SUNRISE LAKE	TOWN: MIDDLETON	DATE: 07/19/9
Кеу	PLANT	ABUNDANCE	
кеу	GENERIC	COMMON	ABUNDANCE
S	Sparganium	Bur reed	Scattered
Y	Nuphar	Yellow water lily	Sparse
d	Dulichium arundinaceum	Three-way sedge	Scattered
W	Potamogeton	Pondweed	Scattered
С	Carex	Sedge	Sparse
L	Lysimachia terrestris	Swampcandle	Sparse
P	Pontederia cordata	Pickerelweed	Sparse
U	Utricularia	Bladderwort	Sparse
A	Sagittaria	Arrowhead	Sparse
J	Juncus	Rush	Sparse
Т	Typha	Cattail	Sparse
b	Scirpus	Bulrush	Sparse
е	Eleocharis	Spike rush	Sparse
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OVERALL ABUNDANCE: Scattered

# **GENERAL OBSERVATIONS:**

- 1. Noticeable algae blooms were present in many of the coves.
- 2. Many of the homes had stone jetties out into the lake.